CLUSTER CONTROL IN NETWORK SYSTEMS

ABSTRACT

Methods and apparatus are provided for controlling the clustering of nodes which implement a cluster-based routing protocol in a data communications network system where the system comprises a plurality of such nodes which are interconnectable to form a plurality of ad hoc networks. For each node which is a member of a cluster, cluster control information (CCMs) is maintained, this cluster control information being dependent on the size of at least the cluster of which that node is a member. On connection of two nodes which are members of two respective clusters, each of the two nodes transmits its cluster control information to the other node, and then determines whether a clustering condition is satisfied. In each node, the clustering condition is dependent on the cluster control information maintained for that node and the cluster control information received from the other node. In each node, if the clustering condition is satisfied, the node then communicates a clustering agreement to the other node. If the clustering conditions of both nodes are satisfied for the two clusters, the two nodes exchange routing information to merge the two clusters.